

LCQ17: Prevention of water mains leaks and bursts

Following is a question by the Hon Vincent Cheng and a written reply by the Secretary for Development, Ms Bernadette Linn, in the Legislative Council today (November 13):

Question:

It has been reported that a number of water mains burst incidents took place in Kowloon West in recent months, and one such incident occurring in the early hours of September 29 even resulted in a road subsidence accident, causing serious disruption to traffic in the district and threatening the safety of members of the public. In this connection, will the Government inform this Council:

(1) of the following information on the water mains burst incidents in Kowloon West from January to October this year: the locations of the incidents, the numbers of service years of the water mains and the materials used, as well as the investigation outcomes of the incidents;

(2) of the distribution of the water mains in Kowloon West already covered by the Risk-based Improvement Programme of Water Mains under the Water Supplies Department (WSD), and the details of the improvement works concerned (including the progress and expenditure);

(3) as it is learnt that the Water Intelligent Network (WIN) is being established by the WSD to monitor water mains leakage, of the current progress of works for the establishment of District Metering Areas (DMAs) in Kowloon West, including whether there is uncompleted DMA establishment works; if so, of the estimated time of completion; whether it will consider expanding the monitoring coverage of the WIN and enhancing its monitoring effectiveness; if so, of the details; if not, the reasons for that;

(4) of the following information on water mains leakage cases in Kowloon West as detected by the WIN in the past three years: the number of cases, the relevant follow-up improvement measures and works, and whether there are previous records of bursts with the water mains involved;

(5) given that in a paper submitted to the Panel on Development of this Council on October 24 last year, the Government has proposed to carry out "the stage 1A of risk-based improvement of large diameter water mains", which includes three kilometres of water mains in the Sham Shui Po District, of the exact locations of the works to be carried out and the current status of the tendering exercise; whether it has considered expediting the commencement and completion of such works; if so, of the details; if not, the reasons for that; and

(6) as there are views pointing out that the Government's progress in water mains replacement is slow, and it is learnt that the WSD carried out a territory-wide replacement and rehabilitation of water mains programme from 2000 to 2015 to replace and rehabilitate about 3 000 km long of water mains, of the number of water mains in the programme that are located in the Sham Shui Po and Yau Tsim Mong Districts, and the coverage of the water mains concerned; whether the Government has considered launching afresh another territory-wide programme to replace and rehabilitate aged fresh and salt water mains, or allocating additional resources to expedite the progress of water mains replacement; if so, of the details; if not, the reasons for that?

Reply:

President,

The Water Supplies Department (WSD) has all along been committed to providing the public with reliable, sufficient and quality water supply. Through continuous improvement in asset management and making good use of technology, the WSD strives to ensure the effective operation of the water supply networks.

From 2000 to 2015, the WSD carried out a territory-wide replacement and rehabilitation of water mains programme to replace and rehabilitate about 3 000 km long aged water mains (including fresh and salt water mains), thereby raising the healthiness of the water supply networks.

Since 2015, the WSD has implemented multi-pronged measures, including adopting a risk-based asset management programme for water mains (Programme) by introducing factors such as age of use, materials, past records of bursts or leaks, surrounding environment and consequence resulting from bursts or leaks, for assessing the risk of water mains so as to replace or rehabilitate specific sections of water mains with higher risk progressively with a view to continuously maintaining the healthiness of the water supply networks and reducing the risks of water main bursts or leaks.

Besides, the WSD is establishing approximately 2 400 Water Intelligent Network (WIN) district metering areas (DMAs) within the fresh water distribution networks in the territory. In addition to monitoring leakage in the networks to carry out maintenance works for damaged mains in a timely manner, the risks of main bursts or leaks can be reduced by detecting and adjusting water pressure through the pressure management devices installed in the WIN.

Through the above-mentioned multi-pronged measures and with efforts over the years, the number of annual main burst cases has been greatly reduced from around 2 500 in 2000 to around 40 cases in 2023 and to 26 cases in 2024 (as at October). The leakage rate of fresh water mains has also dropped from over 25 per cent in 2000 to around 14 per cent in 2023.

The reply to various parts of the question raised by the Hon Vincent Cheng on the situation of water mains in Kowloon West is as follows:

(1) From January to October this year, the WSD recorded a total of five water main burst incidents in Kowloon West, of which three were located in Sham Shui Po District and two were located in Yau Tsim Mong District. The details are tabulated in the Annex.

(2) and (6) Under the programme for replacement and rehabilitation of about 3 000 km long aging water mains completed in 2015, about 150 km long aged water mains in Sham Shui Po District and about 200 km long in Yau Tsim Mong District had been replaced and rehabilitated. Under the Programme, the progress of water main replacement in Kowloon West is as follows:

District	Risk-based asset management programme for water mains			Risk-based improvement of large diameter water mains	
	Length of water mains replaced or rehabilitated (km)	Length of water mains started or planned to start in 2024 (km)	Length of water mains planned to start in 2025 or after (km)	Stage 1A improvement works (km) (started)	Stage 1B improvement works (km)
Yau Tsim Mong	9	5	16	0	6
Sham Shui Po	7	4	7	3	0
Kowloon West (total length)	16	9	23	3	6
	48			9	

The expenditure of completed replacement or rehabilitation works of 16 km long water mains in Kowloon West was approximately \$260 million. The estimated expenditure for works have already started or are scheduled to start in 2024 under the Programme covering approximately nine km of water mains and that for the "Risk-based Improvement of Large Diameter Water Mains, Stage 1A" (three km), which started in 2024, is approximately \$670 million.

The WSD will actively explore with the project consultants and contractors the feasibility of accelerating the commencement and completion of the construction works.

(3) As at September 2024, the progress of DMAs of the WIN in Kowloon West is as follows:

District	In operation	Under construction	Total
Yau Tsim Mong	86	1	87

Sham Shui Po	42	13	55
Kowloon West (total)	128	14	142

The remaining DMAs of the WIN are scheduled for completion in the first quarter of 2025. We and the WSD are currently reviewing the coverages of DMAs of the WIN and the measures to enhance its monitoring effectiveness. The arrangement will be announced later.

(4) In the past three years, the number of water main leakage cases successfully detected in water mains in Kowloon West by the WIN were 12 (2022), six (2023) and 11 (as at October 2024). The relevant cases have been properly followed up, and the relevant leakage points have not developed into water main burst incidents. The WSD will continue to use the WIN to monitor leakage in the network to reduce the risk of leakage in government water mains.

(5) Under the Programme, three km long water mains in the Sham Shui Po area in the "Risk-Based Improvement of Large Diameter Water Mains, Stage 1A" have been included in the works contract number 2/WSD/23. The exact location of the project is Sham Wong Road (near Hing Wah Street West to Chui Yu Road), Yen Chow Street, Kiu Kiang Street, Kweilin Street and Tai Po Road (near Garden Hill). The aforesaid contract was awarded in June 2024 which is targeted to be completed in phases within four to six years.